

GOOD HEALTH

Editor: JOHN HARVEY KELLOGG, M.D., LL.D., F.A.C.S.

The Consequences of the Repeal
of the Prohibition Amendment

The Bland or Non-Laxative Diet

Physical Therapy for Influenza

Coffee Drinking Hostile to
Longevity

Night Blindness a Cause of
Accidents

DEVOTED TO HYGIENE AND RACE BETTERMENT
AND THE DEVELOPMENT OF AN ARISTOCRACY OF HEALTH

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By

John Harvey Kellogg, M.D., LL.D.

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By the aid of a corps of able experts, the health literature of the world is each month critically surveyed, and such new facts as are germane and authentic are summarized and presented to GOOD HEALTH readers in comprehensive form.

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GOOD HEALTH

Devoted to Hygiene and Race Betterment and the Development of an Aristocracy of Health

Edited by DR. JOHN HARVEY KELLOGG

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The Consequences of the Repeal of the Prohibition Amendment

by Senator Morris Sheppard

THE EDITOR received a few days ago from Senator Morris Sheppard, a copy of the *Congressional Record* containing the remarkable address delivered by him on the seventeenth anniversary of the eighteenth amendment.

We wrote the Senator as follows:

Your address is a powerful document and a stern rebuke to the men who robbed the American people of the greatest boon ever acquired by a civilized country. Your address paints in blazing colors the evils of the alcohol habit and the calamitous results of the repeal of one of the most important amendments to our Constitution. You hold up to the mirror of truth the terrible responsibility which men who destroyed prohibition have taken upon themselves and the utter indifference with which they view the physical, mental and moral evils that they have brought upon the American people by their cowardly act, prompted by purely selfish motives aiming toward the satisfaction of political ambitions. It is to be hoped that your scathing exposure of the dastardly crime against our nation may arouse the American peo-

ple to united action against an evil which threatens not only the welfare but the very existence of our country and of civilization.

Mr. President, on this the seventeenth anniversary of the adoption of nation-wide prohibition, which was repealed after an existence of nearly fourteen years, it is significant to observe that the scene with reference to beverage alcohol as a social menace is rapidly changing.

Thousands Killed by Drunken Drivers

To a degree never before realized human safety and human life are dependent on the careful operation of machinery. About 37,000 deaths and hundreds of thousands of accidents resulted from the operation of automobiles alone in the United States last year. It is estimated that 100 persons perish in traffic in this country every day — a little more than four every hour — one every fifteen minutes. A newspaper dispatch informs us that in one wild Christmas Eve carnage ten people were killed in a single night on the streets

of Detroit alone. The property loss from automobile accidents in this country last year is estimated by the National Safety Council at a billion six hundred million dollars. The factory cost of all new passenger cars sold last year is estimated by the automobile industry at a billion eight hundred and forty million dollars. Thus the property loss from automobile accidents in 1936 equaled almost the value of the passenger-car output in that year.

It is true that it is difficult to determine the exact extent to which the drinking driver is responsible for these conditions, due to the fact that the capacity for careful driving of even a moderate and occasional drinker not visibly intoxicated or that of a drinker whose condition is not subject to detection by ordinary means is impaired to such an extent that he becomes the cause of accidents or is helpless to avert them. When it is definitely known, however, that the obviously drinking or drunken driver caused at least 3,600 deaths in the single year of 1935, according to statistics compiled by the National Safety Council, it is reasonable to assume that

the actual number of deaths caused by all drinking drivers far exceeds that figure.

More significant than all assumptions and figures, however, is the fact that the drinking-driver situation is such that sober and careful drivers and pedestrians are in constant dread of what may happen to them from drinking and drunken drivers.

Still more significant is the fact that such statistics as have been compiled show an increasing percentage in recent years of deaths and accidents that can be traced to drinking drivers. In the horse-and-buggy days the drinking driver could drop the lines, relapse into a stupor, and reasonably depend upon his sober horse to take him home safely, and this without menace to others on the highway. In the present age if the driver relaxes control of the steering wheel of an automobile for but a moment he invites and frequently causes death or mutilation to himself, to other drivers, to passengers, and pedestrians.

Aviation Demands Sober Pilots

The changing scene consists also in the increasing responsibilities that devolve upon the airplane pilot and the locomotive engineer, on whose sobriety, steadiness of nerve, control of reflexes, and reactions depend the lives of greater and greater numbers of people. The same impairment of mental and physical capacities produced by even moderate indulgence in alcohol in the case of the driver of an automobile occurs also in the case of the airplane pilot and the locomotive engineer. It occurs also in the case of those who operate the vast machinery of modern industry — machinery representing the most tremendous concentrations of mechanical power ever known — where momentary loss of mental and physical control may mean destruction of life and property on an unprecedented scale.

It is well said that, with alcoholic liquor so extensively sold

today, it can scarcely be an exaggeration to credit to its use a considerable proportion of the 4,000 accidental deaths last year in the trade and service industries; of the 1,900 deaths recorded in the manufacturing world; of the 2,100 deaths reported in the field of public transportation and public utilities; of the 2,500 deaths in construction activities, and certainly a definite percentage of the 31,500 fatalities recorded as home deaths.

While it is true that rigid rules against drinking while at work have been established by employers, the fact that liquor is increasingly available everywhere and less subject to regulation than ever before creates a situation whereby the operators of machinery are increasingly powerless to resist the lure of alcoholic drink.

Good Government Requires Sober Officials

Another aspect of the alcohol problem may be found in the wider and more complicated problems of modern government, requiring the exercise by the individual of all his faculties and all his mental and moral resources. These faculties and resources are needed in their utmost purity and power at the ballot box, where every individual in a democracy participates in the direction of a nation's destinies. A drink-dulled mind is thus a handicap to the performance of the duties of citizenship — a handicap which becomes more serious as society becomes more vast and intricate.

The new scene shows the civilization of the machine age speeding forward. The individual must go forward with it, his faculties alert, intact, and constantly improving. Progress will continue in proportion as individuals are able to operate modern machinery with safety and efficiency. They cannot do these things if beverage alcohol is permitted to narcotize their energies and to slow down their mental and physical powers. America must

be made safe for the speed essential to modern civilization.

The New Saloon More Dangerous Than the Old

Another part of the scene is the new saloon — more alluring, more enticing, more dangerous than the old. The old saloon was the outgrowth of years of experience in the attempt to police the liquor traffic. The argument in support of it was that it segregated the sale of liquor from that of other merchandise; that women and children were excluded.

The old saloon fell into disrepute, not only because of the products which it sold but because of the social and other abuses which it helped to develop. It was promised that when the eighteenth amendment was repealed the saloon in any form would not be permitted to return. Many ingenious devices have been contrived to prevent the place of retail sale from having the appearance of a saloon. Package stores are being tried. The requirements that liquors shall be purchased only with meals, that patrons shall drink while seated at tables and not while standing with one foot on a brass rail at a bar are also being tried. But thoughtful observers of conditions today are inquiring whether these so-called substitutes for the saloon are not in many respects far worse than the old saloon. The employment of hostesses and barmaids, including many young girls, and the presence of women and girl patrons in growing numbers, in these new liquor places are developing serious problems.

A characteristic of the old saloon, however, that has returned in more sinister proportions is the practice of wage-check cashing across the bar.

The Saloon Bar a Menace to American Homes

The American Business Men's Research Foundation says that this new-old scheme of boosting bar profits is rapidly becoming a menace to the happiness and

solvency of thousands of American homes.

This Foundation also says that the present unrestricted practice of cashing wage checks in taverns and saloons, which is now being widely promoted by liquor sellers and dive keepers, has become a serious factor in increasing liquor consumption and in depriving legitimate trade of millions of dollars of normal business.

This Foundation says also that in many cases a large proportion of the tavern patrons for hours following pay-offs are those who crowd into the bar for this accommodation, and who, practically without exception, reciprocate by purchases ranging from one to an indefinite number of "courtesy" drinks.

This Foundation says further that this practice is developing even more serious abuses, such as temporarily withholding complete payment of checks so proffered, with the result that credit so extended leads to weekend liquor bouts leaving in the barkeeper's till all or a large portion of the entire amount of the workers' checks.

This Foundation asserts further that self-evidently the most serious phase of the saloon pay-check cashing problem is the increasing diversion of labor's wages to the liquor trade from legitimate neighborhood retailers, merchants, and banks, and the consequent curtailment of savings deposits and expenditures for the purchase of necessities and wholesome luxuries.

Liquor Consumption Increasing by Leaps and Bounds

Another phase of the liquor problem at the present time lies in the increasing consumption and increasing storage for future consumption of distilled and fermented liquors. Consider what has happened in the three years since repeal. Before national prohibition the largest consumption of alcoholic beverages occurred in 1911, amounting to a little more than twenty-two gallons per capita.

In the three years since national prohibition the per-capita consumption of legal liquor has been increasing in such a ratio as will bring this consumption to what it was in 1911 in another three years. The official tax-paid per-capita withdrawal figures representing liquors withdrawn from bonded warehouses for sale are as follows: About eight and a half gallons per capita in 1934; eleven and a half gallons per capita in 1935; and about thirteen and a quarter gallons per capita in 1936. This does not take into account the consumption of bootleg liquor since repeal.

Liquor Manufacturers Preparing for Greater Future Consumption

Not only are we confronted with a rapidly mounting consumption of liquors but with the efforts of liquor manufacturers to insure greater consumption in the future. Vast quantities of distilled and fermented liquors are being manufactured and stored in Government warehouses for future use.

These tremendous stocks indicate the plans of the liquor traffic for the future. Misery in storage! Crime on deposit! Murder in reserve! Hell warehoused for the future undoing of mankind!

According to the study entitled "After Repeal," published by the Institute of Public Administration, an endowed institution affiliated with the New York Bureau of Municipal Research and Columbia University, the most discouraging thing in connection with the liquor traffic since repeal is that the bootlegger is still with us.

Repeal Associates, an organization including many individuals formerly connected with the Association Against the Prohibition Amendment, is so disturbed by the present situation that it has sent a letter to temperance groups urging cooperation in the effort to suppress bootlegging, saying:

"Knowing your keen interest in the promotion of abstemious

temperance in the use of alcoholic beverages, I take pleasure in inviting you to join in a campaign to get rid of bootlegging — a campaign in which Repeal Associates is now engaged. Despite a fundamental difference in our philosophy as to the best methods for handling the liquor problem, I am confident you will agree with us that bootleggers and the murderous criminal organizations which they support are still serious menaces to public security and personal well-being and stumbling blocks in the way of temperance education and proper control of the liquor traffic."

Thus the bootlegger persists, and continues to be a real problem. And yet we were told that with repeal the bootlegger would disappear.

Let us turn now to the nature and to the effect of beverage alcohol.

Senator Sheppard Arraigns Alcohol as a Criminal

Because of its nature and of its effect I arraign beverage alcohol before the thought and judgment of America.

I arraign it as a narcotic poison.

I arraign it as a poison side by side with morphin, opium, and cocain.

I arraign it as a false and pretended stimulant.

I arraign it as an assailant of the higher centers of the brain and of the normal reflexes and reactions.

I arraign it as a habit-forming drug.

I arraign it as a destroyer of life, reason, self-control, endurance, skill, and moral fiber.

I arraign it as a source of crime and waste and human degeneration.

I arraign it as an executioner of soul and body.

I arraign it as a promoter of disease.

I arraign it as a barrier to thrift.

I arraign it as a threat to life and limb.

I arraign it as a producer of insanity.

I arraign it as the enemy of youth.

I arraign it as a wrecker of homes.

I arraign it as a defiler of motherhood and virtue.

I arraign it as a blight upon the happiness and the progress of mankind.

Prohibition Repeal in the Light of History

What will the future historian have to say concerning the constitutional change that occurred on December 5, 1933? That date marked the repeal of the eighteenth amendment to the Constitution, which had outlawed liquor throughout the United States. Three years have since elapsed. Within that period a majority of the States of the Union have enacted legislation reestablishing the legalized liquor traffic under various plans of regulation and control, and the Federal Government has established its administrative system relating to the liquor traffic within those spheres of Federal activity now assigned to the National Government under the twenty-first amendment.

How is the new attempt to solve the age-long problem of beverage alcohol working? To what extent are we realizing upon the promises that the legalization of beer and wine would discourage the use of hard liquors, that repeal of national prohibition would promote temperance, would lessen the cost of administration of the liquor laws, and reduce crime? In none of the present so-called liquor-control systems is there

any adequate or effective method of dealing with the social factors involved in the liquor problem.

It would be difficult to imagine a greater diversity of approach than is suggested in the liquor-control laws that have been set up since repeal of national prohibition. In fifteen States the State monopoly is in force, where liquors of higher alcoholic content are sold either by State stores or by State-appointed agents. In six States there is State prohibition, while two others have local dispensaries. Wide variance prevails in the methods of local option in those States which permit it.

But no matter what type of law has been enacted since repeal, the basic consideration appears to have been the collection of liquor revenues, with slight regard for social consequences. In the mad scramble for tax receipts social considerations have been ignored.

This condition challenges action. The American people did not adopt either State or National prohibition as a result of prejudice or of haste. They adopted prohibition after years of experience with the liquor traffic had left them no other choice.

The Bootlegger Is Still Here

Today there is still no other choice. The bootlegger is still with us, crime is still rampant, the highjacker is still present, the gangster still kills, public enemies still war upon us, kidnapers still ply their ghastly trade, while the destroyer, alcohol, converts the highways into avenues of death and mutilation.

Mr. President, it is evident that three years after repeal beverage alcohol is more of a danger and more of a menace to America than ever before. It is also evident that those who brought about repeal have not remedied the danger nor modified the menace. It is further evident that the evils of beverage alcohol have assumed such obviously destructive forms that an aroused public sentiment, when the case is properly presented, may well be expected to support the reenactment of Nation-wide prohibition. The widespread revolt against the eighteenth amendment was, in my judgment, due mainly to the feeling that prohibition was an effort on the part of certain groups to interfere with the private habits of others. This was perhaps the principal cause of the breakdown of enforcement and of the support of the paid propaganda which ultimately produced repeal. Present events in connection with beverage alcohol, however, show that the liquor problem involves more numerous and more serious considerations than anyone has ever realized.

The American people have become alarmed over the continuous and increasing slaughter of human beings in which beverage alcohol plays a continuous and ever-growing part. They will not long continue to tolerate the traffic in beverage alcohol which produces so much of this slaughter and so many other evils, including that deadliest of perils to the American family and the American home, and hence to the foundations of American civilization, namely, the spread of drink among the women of America.



History of the Remedial Use of Water in Modern Times*

by Dr. John Harvey Kellogg

CULLEN made some very practical observations respecting the therapeutic uses of water. In his treatise on fever he commended water as a sedative when used in such a manner as to "moderate the violence of reaction," and as a tonic when used for "supporting and increasing the action of the heart and arteries." The action of cold he described as follows:

1. Diminished temperature and pallor of the skin.
2. Weakened action of the heart and arteries, observing that in cold countries the pulse is uniformly slow.
3. Weakness and inactivity, effects observable in the inhabitants of cold countries.
4. Prolonged and very cold applications "are capable of entirely extinguishing the vital powers," cold combined with moisture chilling the body much faster than dry cold.
5. Cold applications prepare the body for applications of heat, "producing accumulation of sensibility to the stimulus of heat."

Cullen used water according to Dr. Darwin's rule — "to warm the patient in the cold fit, and to cool him in the hot one."

*From *Rational Hydrotherapy*, by Dr. John Harvey Kellogg, Modern Medicine Publishing Company, Battle Creek, Michigan.

It is very interesting to observe how few of our modern methods of employing water are really new. The moist compress was well known to the ancient Greeks under the name of "epithem." According to Sir John Floyer, who wrote in the latter part of the seventeenth century, the wet-sheet pack was employed in his time by sportsmen who wished to diminish the weight of their jockies. The method is thus described:

"Dip the rider's shirt in cold water; and after it is put on very wet, lay the person in warm blankets to sweat him violently, and he will after lose a considerable weight, a pound or two."

The same method was used in the treatment of various maladies, particularly rickets in children. The child, being prepared for bed with a gown and nightcap, was quickly immersed in cold water, then put to bed closely wrapped in warm blankets, and left in this condition all night, sweating profusely, a portion of the clothing being removed toward morning so that the body might be gradually cooled. That it was the custom to employ this method with great perseverance is evidenced by the following suggestion made by the learned

author: "If one year's dipping proves not successful, it is repeated the next year, which generally answers expectation."

Floyer also mentions that in Staffordshire and other parts of England it was a custom with the people "to go into the water in their shirts, and when they come out, they dress themselves in their wet linen, which they wear all day, and much commend that for closing the pores and keeping themselves cool; and that they do not commonly receive any injury or catch any cold thereby, I am fully convinced from the experiments I have seen made of it."

The leading features of the so-called "Kneippism" are simply a revival of these rude practices of ignorant English peasants a century and a half ago.

Sir John Sinclair, in his "Code of Health and Longevity," gives an account of an English nobleman, born in the year 1700, who for a great part of his life was accustomed, immediately on arising in the morning, to wrap himself in a sheet just dipped in cold water — a wet-sheet pack.

In the fifteenth century, Savonarola, an Italian physician, made a systematic use of the cold bath, and Barizzi em-

ployed the cold vaginal douche in uterine affections. Cold affusions and general douches were employed by Baccio in Italy, while leading Spanish and German physicians recommended cold applications for insomnia.

Septala, in the seventeenth century, employed the cold douche for the relief of headache and sunstroke.

Herman, a Belgic physician, resorted to the use of cold water at the same period for the relief of constipation, migraine, paralysis, and mania, — maladies in the treatment of which cold water still holds its own against all other single remedies.

Sir John Floyer, in 1697, published a history of cold bathing, in which he directed that the patient should be made to sweat before taking the cold bath, by wrapping him in a wet sheet with blankets, precisely the same method employed more than a century later by Priess-

nitz, and now known as the wet-sheet pack. Floyer also erected a water-cure establishment at Litchfield, England, in the latter part of the seventeenth century. Two rooms were provided, one of which was used for hot baths and dry packs to produce sweating, while cold baths were administered in the adjoining room.

John Hancock published a work entitled "Febrifugum Magnum," in 1723, in which he demonstrated the value of water-drinking as a means of treatment in scarlet fever, smallpox, and measles. He cured ague by having the patient drink large quantities of cold water while wrapped in blankets, thus inducing profuse sweating.

Sir John Chardin, a celebrated English traveler of the 18th century, had bilious remittent fever when in Persia. His companion, a French surgeon, thinking his case hopeless,

a native physician was called in, who made the patient fast five days, and drink large quantities of water previously cooled with snow, causing him to lie meanwhile upon a mat wet with water, and keeping the skin constantly wet with water. Water was also poured at intervals over the patient while two men supported him. In two days the fever disappeared.

This Persian physician evidently had a knowledge of the value of water-drinking, of the evaporating bath, and of affusion as a means of combating fever, — invaluable measures, of which Western physicians are scarcely yet making any considerable practical use.

The native physicians of Mohammedan countries still generally follow Galen, and so make use of water in many maladies in a very effective and practical way.

(To be continued)

Child Feeding and the Public Health

PUBLIC HEALTH officials are beginning to extend the scope of their activities so as to include child feeding and training. Many years ago (1880), when the writer was a member of the State Board of Health, a study of the mortality tables brought to light the fact that the lowered mortality rate and consequent increase in average longevity were due to the suppression of infectious diseases, especially such maladies as typhoid fever, scarlet fever, smallpox, measles, etc. The gain from this source was, in fact, so great that it overshadowed a steady loss in maximum longevity. In other words, while average longevity was increased, maximum longevity was diminished. The proportion of centenarians in the population has lessened steadily during the last fifty years.

Quite in line with this thought are observations made in connection with welfare feeding in

Syracuse, New York, which indicate that children on the plain and simple, but wisely arranged, welfare diet show evidence of being better nourished than the children from well-to-do families.

In a recent number of the *New York State Journal of Medicine*, Dr. Edward J. Wynkoop emphasizes the importance, from a public health standpoint, of the proper feeding of children. He especially condemns eating between meals, which he regards as laying the foundation for various ailments which appear in later years. The Doctor called attention to the evil effects of eating ice cream and candy between meals through causing loss of appetite for wholesome food and injuring the digestive organs by giving the stomach no opportunity for rest. Other errors in the training of children were mentioned, particularly the loss of sleep, due to moving picture and radio attractions.

Late rising occasions a hurried breakfast or no breakfast. Growing children need considerable quantities of water, much more in proportion to their weight than do adults, because of the rapid change of tissue, constant rebuilding, and remodeling of the body.

The essential importance of an abundance of fresh air and sunshine secured by outdoor exercise, was pointed out, together with the avoidance of rich foods and palate-tickling dainties which lead to a dislike for the simple, wholesome foodstuffs needed for good nutrition.

A poorly-nourished child is an easy prey to scarlet fever, measles, chicken pox and other children's disorders. Such children are very likely to succumb to pneumonia or the "flu," or to suffer life-long injury, or even death, from bronchial pneumonia as a complication of measles, or from some other serious lung trouble following whooping cough.

The Bland or Non-Laxative Diet

THE BLAND diet consists of foods which are lacking in the qualities which stimulate either secretion or motility; that is, foodstuffs which are smooth, emollient, and not highly flavored. Condiments of all sorts are excluded, with the possible exception of salt, which may be allowed in very small amount. Cane sugar must be avoided, on account of its irritating properties. Milk sugar or beta-lactose (B-Lac), or dextrin (Nuflora), may be used in its place. Rice gruel, oatmeal jelly, barley water, and cornstarch or arrowroot gruel, are typical bland foods. In most cases cream or milk may be added. Malted Nuts, almond cream and soy bean milk may be used when cow's milk disagrees. Soy acidophilus milk, in quantities of two to three pints, should be used to insure a non-putrefactive flora. Such very bland foods are required only in exceptional cases, as acute inflammation or burns of the mouth and throat from hot liquids or chemicals, or acute inflammation of the stomach.

In general, milk may be used in combination with the foods named or even by itself. Buttermilk with rice or cornstarch is often preferable to fresh milk.

Purées of potato and other vegetables, mushes, porridge, cream toast, panada, and most breakfast cereals are suited to cases which do not require the blandest foods. Eggnog (yolk only), coddled eggs and custards, are also allowable in

many cases, as well as mildly flavored jellies prepared from agar or vegetable gelatin.

There is perhaps less frequent occasion for the use of a bland diet than is generally supposed. The mere fact of frequent bowel movement is by no means an indication for a bland or non-laxative diet. Frequent bowel movement is very often due to the fact that the colon is completely filled with putrefying residues, the frequent but incomplete evacuations being simply the overflow of an over-filled reservoir. In such cases, increased bulkage is needed and laxative food accessories are indicated, rather than a bland dietary. Harm rarely results from a laxative diet except in cases of acute gastroduodenitis, enteritis, dysentery, or colitis. Food is a natural and harmless laxative. Bulky food does not stimulate peristalsis by causing irritation, but by titillation. The malaise and weakness present in acute diarrhea is the result of the absorption of the toxins produced by disease-producing bacteria and not by the looseness.

In every case in which the stools are too frequent, the carmin test or barium meal should be employed to determine whether there is increased intestinal motility, or, instead, a stasis due to a spastic state of the descending colon. In by far the great majority of cases, the right half of the colon will be found filled with residues which should have been evacuated two

to six days before. In such cases, increased colon activity is needed. Irrigation or enemas are often needed, and such non-irritating laxative food accessories as psyllium or Kaba.

The bland liquid diet is most clearly indicated in cases of feeble patients who are too ill to chew hard or dry food, in certain surgical cases, in cases in which tube feeding is required for duodenal or gastric ulcer, sometimes in cases of insane persons who refuse to eat and must be nourished by tube feeding, and in inflammations of the mouth.

It should be remembered that, in general, a bland diet is highly constipating. In infants and in many adults, acid fruit juices and malt sugar solutions have a laxative tendency. Agar jellies are somewhat laxative. Purées of figs, dates, prunes and other fruits should be used when possible, though, in general, acid and saccharin foods must be avoided.

Care must be taken to cleanse the colon twice a day by means of a hot (110-115° F.) enema. When rectal or colonic irritation exists, a pint of thin warm starch solution should be introduced into the colon after each enema. Most valuable of all is soy acidophilus milk, 2-3 pints daily.

All meals should be light, and frequent feedings (four to six daily) should be given if necessary.

(Continued on page 92)

Carbohydrates—Starches and Sugars

by Dr. John Harvey Kellogg

THE CARBOHYDRATE element of foodstuffs consists chiefly of starches and sugars. Many fruits and vegetables contain fruit acids, which are also potential carbohydrates. Lactans and pentosans are found in certain fruits and legumes. These carbohydrates are not utilizable by human beings, although they are apparently readily assimilable by herbivorous animals. Hence, we derive practically all of our carbohydrate nourishment from starches and sugars.

The normal human diet contains about sixty per cent of carbohydrates, the most of which is starch. The starches are for the most part derived from cereals, but a few roots and vegetables are also rich in starch, particularly the Irish potato, the sweet potato, the manioc root and arrowroot. The taro of the Sandwich Islands and the dasheen, a near relative of the dahlia of our flower gardens, are other valuable sources of edible starch.

Starch appears in plants in the form of granules which differ in size and appearance in different species of plants.

The accompanying illustration will give something of an idea of the characteristic appearance of some of the more common forms of starch.

The chemical composition of starch (saccharid) is $C_6H_{10}O_5$.

Cane sugar, malt sugar and milk sugar have a similar composition, a single molecule of water being added to two molecules of starch — $C_{12}H_{22}O_{11}$. Glucose and levulose have the composition $C_6H_{12}O_6$.

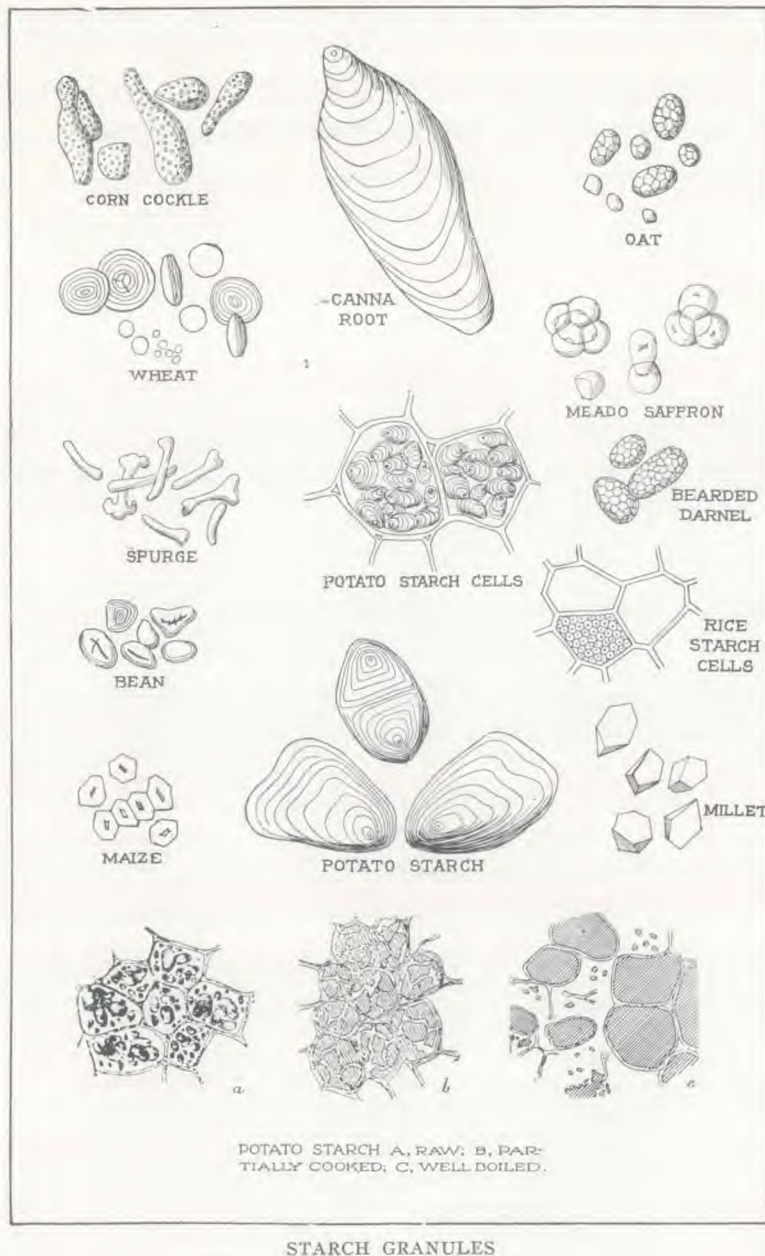
Certain vegetables contain peculiar carbohydrates which have the composition $C_5H_{10}O_5$, called pentosans. By digestion, these bodies are converted into pentoses, a kind of sugar which the human tissues are unable to utilize. Pentoses are found in the urine after the eating of prunes, cherries and grapes. The soy bean contains a considerable amount of pentosans and pentoses, but only a trace of starch.

Starch and dextrine seem to be the carbohydrates best adapted to the use of human beings. As supplied by the plant, starch is insoluble in water and non-absorbable, and must be transformed by the processes of digestion before it can be utilized. Very liberal provision is made for the utilization of starch. Its digestion begins in the mouth, before that of any other food substances. The work of transforming the starch into sugar is continued in the stomach. In the intestine, the starch digestion is carried on by the pancreatic and intestinal juices.

By this arrangement, the sugar formed from the starch is

produced and absorbed slowly, so that the blood at no time becomes overcharged with sugar. The normal sugar content of the blood is about one part in one thousand. When this is much exceeded, the kidneys remove the sugar to prevent injury to the blood vessels and other structures, which would result if the sugar were allowed to accumulate. This explains the appearance of sugar in the urine when large quantities of sugar are taken. If, for example, a half pound of candy or sugar in some other form is eaten at once, within a short time sugar will appear in the urine; but the same amount of sugar taken in the form of starch will never cause the appearance of sugar in the urine of a healthy person. This is the difference between a person in health and a person suffering from diabetes. A diabetic may show sugar in the urine, even though no sugar but only starch has been eaten. But this never occurs in a normal person, no matter how large a quantity of starch may be taken at one time.

As an additional precaution against a too rapid intake of sugar and its undue accumulation in the blood, the liver is endowed with the special function of capturing the sugar and retaining it within itself by changing it into a form of carbohydrate known as glycogen, a sort of animal starch.



STARCH GRANULES

The muscles, also, have the ability to convert sugar into glycogen, and thus a certain amount of carbohydrate is stored up to be utilized in maintaining the sugar content of the blood at its normal percentage during the intervals between meals or longer periods of fasting.

During a complete fast, the store of glycogen is practically used up after two or three days.

Starch has the further advantage over sugar as a carbohydrate food in the fact that it has a neutral flavor, and is bland and absolutely uniritating.

Another advantage possessed by farinaceous foodstuffs over cane sugar consists in the fact that in this form the carbohydrates are not isolated, but are associated with the lime, iron and other salts as well as the precious vitamins, all of which form an essential part of the day's ration.

Some years ago, Grierson made the interesting discovery that there is a marked difference in the digestibility of starch from different sources. Grierson found, for example, that the starch of wheat, corn and rice

requires two full hours for digestion, whereas the same quantity of oatmeal starch digests in eighty minutes, and the time required for the digestion of a like quantity of arrowroot starch is but thirty minutes and of potato starch only ten minutes. From which it appears that the root starches are much more easily digestible than are the cereal starches, the starch of wheat, corn and rice requiring twelve times as long for digestion as does the starch of potatoes, and the starch of oatmeal eight times as long.

The prejudice against farinaceous foods which still seems to exist in the minds of many persons, even some physicians, is wholly without sound foundation. Of all the elements of our food, starch is the least likely to give rise to inconveniences or to produce harmful effects, even when taken in excess; and the notion that the free use of starch gives rise to rheumatism, to intestinal indigestion, to gastric or intestinal fermentation, or "sour stomach," is wholly baseless. It is of course possible that the dietary may contain a disproportionate amount of starch, so that an individual may suffer for the lack of other necessary elements; but in such cases the bad effects observed are not to be attributed to the starch itself, but rather to lack of other essential elements.

For example, in the feeding of babies, it has long been observed that infants do not thrive on farinaceous infant foods, a long list of which have been offered as safe substitutes for mother's milk and cow's milk; and this has been found to be true even when these farinaceous food products were combined with a considerable proportion of cow's milk, sufficient to supply the protein and fat required. It is now known that the chief injury sustained by the child under these circumstances is the result of the lack of vitamins, which are supplied by mother's milk. The child gets all the protein, fat and carbohydrate it needs, but

lacks the vitamins which are essential to promote growth. This defect may be remedied by the use of orange or tomato juice.

Daniels and others have recently shown that the growth of babies may be increased by adding to the milk a soup prepared from wheat germs. The notable results obtained are doubtless due to the vitamins contained in the germ of wheat.

The dietaries of adults, when largely made up of farinaceous foodstuffs in their ordinary commercial forms, are equally liable to be lacking in vitamins. For example, fine flour bread, polished rice, the new process corn meal, corn flakes, rice flakes, macaroni, and, in fact, most of the cereals found upon the average breakfast table, are deficient in vitamins.

The hardy Chinese laborer, the gigantic Japanese wrestlers, the sturdy Smyrna porters, the long distance runners of India, the hardy Alpine peasant, all thrive on diets in which natural farinaceous foodstuffs are the staple, but which are supplemented by liberal quantities of greens and other foodstuffs which are rich in vitamins.

Hindhede has clearly demonstrated the safety of a highly farinaceous diet by long continued researches which have brought him into great prominence as an author in human nutrition in his own country, Denmark, although they have received little attention in this country. In a letter received by the writer from Professor Hindhede of Copenhagen, sev-

eral years ago (1919) he said that he then had under observation a man who had subsisted for twenty-three months on a diet consisting exclusively of bread, potatoes and greens. No fat of any sort was added to the foods named, and not a particle of other food had been eaten, yet the subject was in perfect health, vigorous and athletic, and able to engage in the hardest work. Professor Hindhede remarked that he had noted that large quantities of greens were very essential. McCollum, Mendel and others have shown that both cereals and potatoes are deficient in the fat-soluble, growth - promoting vitamin which is supplied abundantly by greens of all sorts.

When much gas is formed in the intestine as the result of eating freely of starchy foods, the cause is not "dyspepsia" but a "bad flora," that is, the presence in the colon of that most mischievous of microorganisms, Welch's bacillus, or an excessive number of colon bacilli. Without lessening the intake of carbohydrate, even increasing it, the gas, though at first increased, disappears as soon as the flora is "changed." This the writer has witnessed in hundreds of cases.

The Digestibility of Raw Starch

Observations by Langworthy and Deuel (*Jour. Biol. Chem.*, May, 1920) seem to demonstrate that the uncooked starch of corn and of wheat is quite easily digestible, and when eaten by human beings in quantities of

ten to twelve ounces is completely digested and assimilated, no trace being found in the feces. In the case of raw potato starch, 20 per cent remain undigested.

It was noted, also, that the raw starch did not interfere with the digestion of other food principles taken with it, although, in the case of the potato, unpleasant symptoms, particularly a considerable formation of gas and "frequent intestinal cramps," were noted.

An interesting observation was that with the potato diet the feces, when heated, gave off no fecal odor but rather an odor of scorched bread, which we take to be evidence of the value of raw starch as a means of suppressing intestinal putrefaction, a matter to which the writer has frequently called attention and on which is based the recommendation to cook oatmeal six to ten minutes rather than longer.

Langworthy's results are in accord with laboratory observations made many years ago (1905) by the writer in experiments with raw starch in which it was observed that raw starch was digestible in quantities of four to six ounces. It was noted, however, that different persons differed in this regard. In the case of one person, most of the starch was discharged undigested, and there was diarrhea with much griping and malaise.

Next month, we will discuss another class of carbohydrates, the sugars.

(To be continued)

Heredity and Stoutness

IN A STUDY to determine to what extent heredity is concerned in obesity, Dr. R. Gurney (*Archives of Internal Medicine*) found that eighty-two per cent of a group of seventy-five stout women had one or two parents who were overweight. In a control group of forty-seven women who were not stout, only thirty-eight per cent had one or both parents who were stout. Of

eighty-nine children born to stout parents, sixty-five were stout; of one hundred seventy-six children only one of whose parents was stout, seventy were stout. Of one hundred seventy-six children neither of whose parents was stout, only sixteen were stout.

Some of the obese women declared that they became overweight after motherhood, while

others reached the condition after an operation. Only a small percentage had always been stout. A practical lesson to be learned from this is that where either or both parents are stout, their children should take especial precautions against reaching this condition. Prevention might not be so difficult as cure. —S.

FROM THE EDITOR'S PEN

Physical Therapy for Influenza

RESULTS of elaborate studies on the prevention and cure of influenza were presented at a conference in Moscow under the auspices of the medical council of the Russian Commissariat of Health. Observations on 6,000 cases indicated that the duration of the disease was shortened by as much as one half through quartz lamp treatment. Of 120 mice which were infected with influenza bacteria and then treated with the quartz lamp, not one died; of the control mice not thus treated, half died while the rest had a much longer illness.

A group of workers received quartz lamp radiation at intervals during three years; they became sick much less frequently than others under control. A reduction of from forty-six to sixty-two per cent in the incidence of the disease was noted from the use of the quartz lamp. Electro-ionization with ultra-violet rays produced favorable results in regard to general conditions, reduced temperature, pulse and respiration and shortened duration of the influenza. Small doses of chlorin by inhalation as a preventive and a remedy yielded encouraging results in a majority of cases.

Eighty volunteers inhaled the pulverized virus which causes influenza as an aid in the study of the disease.

An acute attack of influenza is usually ushered in by symptoms of a cold in the head, with pain described as "aching in the bones," a general muscular soreness, with lassitude and the pronounced feeling of malaise.

A vigorous sweating bath, an ordinary tub bath at 105° F., an electric cabinet bath, or a sweating pack, with copious water drinking (a tumbler full every

hour, with rest in bed, thorough emptying of bowels by means of a hot enema 105° to 110°, morning and night, are simple measures which often result in speedy arrest of the disease if employed promptly after the appearance of the first symptoms.

The diet during an attack should consist chiefly of fruits, fruit juices and green vegetables, such as lettuce, spinach, and especially parsley. Greens of all sorts are the richest known sources of vitamin A, which builds up resistance to infection.

Citrus fruits are helpful. Six or eight glasses of orange juice a day will render great service in mitigating symptoms and shortening the attack.

Treatment should be continued for several days even after the symptoms have disappeared.

Beef tea and coffee and all indigestibles should be carefully avoided, not only during the attack but for weeks afterward.

Smokers are especially liable to influenza attacks, and more likely to suffer from pneumonia and other of the dangerous sequelae which follow in the wake of this disease, the cause of which is still more or less of a mystery.

A Notable Discovery

A DISCOVERY which may possibly prove to be almost as great a contribution to human welfare as the discovery of bacteria by the late Professor Pasteur, has recently been recognized by the American Association for the Advancement of Science, in granting to Dr. Wendell M. Stanley, of the Rockefeller Institute, a prize of one thousand dollars for medical research.

Dr. Stanley's discovery consists in the recognition of a new kind of living organism that appears to be a lower type of

organized substance, which possesses only in part the properties that have heretofore been regarded as essentially characteristic of living organisms.

The New York Times, in giving an account of Dr. Stanley's discovery, states that these new organisms, which dwell in a twilight zone between the living and the non-living, although lacking in other characteristics of living matter, possess the power of reproduction in a high degree.

These curious forms of semi-living matter may behave like individual molecules. One of them, the virus protein, is the largest molecule known, having a weight 17,000,000 times that of the atomic unit, hydrogen. Seven hundred thousand of these molecules placed close together in a row would form a line one inch in length. A line of hydrogen molecules of the same length would number nearly 11,000,000,000,000.

Dr. Stanley is continuing his work and there seems to be ground for expecting that the ultimate result of his research will be the discovery of means by which a serum, or vaccine, may be produced by the use of which such maladies as influenza, infantile paralysis, yellow fever, the common cold and other maladies which are believed to be produced by non-filterable viruses, may be prevented, and perhaps cured, by immunization.

This discovery, if it proves to be all that is hoped for it, may lead to undreamed-of progress in combating human infirmities. At the present time, we are helpless in spite of all that science and hygiene can do for us in the presence of certain so-called specific microorganisms, germs, and viruses possessed of such virulence that natural immunity breaks down in their presence. Even the

most meticulous attention to diet and other health requisites will not render one immune to smallpox, measles, or any other specific or contagious malady.

Dr. Stanley's discovery may possibly lead the way to the filling of this gap in our advance against microorganisms, the most numerous and dangerous of all the enemies of human life.

Life a Struggle

LIFE IS A struggle. One does not need to belong to the "down-trodden class," of which our Socialist brothers talk so much, to realize that. The same enemies — without and within — threaten the king on his throne as they do the humblest of his subjects.

Within twenty-four hours after birth, the enemies of life and health begin their menacing career and so continue through the years — assaulting, tearing down, destroying. If it were not for the marvelous means of defense with which the body is supplied, we should not be able to hold our own a week against the inroads of the enemies — simply give up the struggle before we had begun to know the meaning of life.

Many people do give up — without even running up a flag of truce. Through lack of intelligence, perverted ideas, bad judgment, they tear down the fortress and let the enemy approach from all sides.

Given a strong body — a veritable castle, if you please — equipped with all necessary defenses from Nature's arsenal: blood to destroy the germs; liver to destroy the poisons which the germs produce; kidneys, lungs and skin to drive out the poisons; and straightway they break down the discipline without which no defense can be maintained, and by errors in diet, sedentary habits, living in overheated, poorly ventilated apartments, they make inadequate the defenses and expose the castle to death-dealing agencies. And the stately fortress, built to stand the test of years, becomes a crumbling ruin, unfit

for human habitation, echoing no more to the music of happiness, failing to fulfill its God-given mission in life. And this through criminal carelessness and neglect.

Night Blindness a Cause of Accidents —Its Causes and Cure

IN THE widespread efforts to lessen the number of accidents on the highways, little attention has been paid to night blindness. Yet a certain proportion of the casualties are unquestionably due to this. The subject is worth study, in the opinion of Dr. Harold Jeghers, of the Boston University School of Medicine, who writes in the *New England Journal of Medicine*. This disease, often called hemeralopia, is difficulty and occasional inability of adapting the sight to very faint illumination. It may be due to glaucoma or various other eye troubles but may also exist where that organ is in health; in this latter case, it is known as essential hemeralopia.

The subject of night blindness is unable to distinguish objects clearly in a dim light, and very often soon after the sun sets, is practically blind because of deficient light, although able to see well in the daytime except in a darkened room.

In reduced illumination the acuity of vision is lowered, the field of vision is narrowed for white as well as colored objects, the adaption time is prolonged and the power of distinction is lowered. It now seems clear that night blindness is usually the earliest and most constant manifestation of lack of vitamin A in the food. This may continue for years without any other sign of the deficiency appearing. Medical attention is not sought except in severe cases. A moderate degree may exist without the individual being aware of it. The vitamin is present in very large amounts in the retina and lack of it in-

terferes with the proper functioning of the eye.

Photometer tests showed twenty-one per cent of a large number of children to have varying degrees of vitamin A deficiency. In 700 adults, Jeghers found this avitaminosis in from ten to fifty per cent of different groups. Similar results have been obtained both in this country and Europe. Invariably feeding of vitamin A or carotene for two weeks or longer restores such eyes to normality.

Persons with this lack of vitamin A sometimes tell of difficulty in driving at night, especially in the country where there are no street lights. Passing an oncoming automobile is particularly trying because of the temporary blindness due to the glare of the headlights. One man was driving on the wrong side of the road without knowing it, and was accused by a policeman of being drunk. Two chauffeurs in France had a total of six accidents at night with loss of human life. Yet both drove skillfully in daylight.

Park found that more than half of 275 persons tested had some night blindness, although only twelve had complained of any trouble.

Another symptom which may indicate the existence of conditions tending toward night blindness is the prolonged persistence of what is known as the *after-image*. When one looks at a brightly illuminated object and then closes his eyes, he still sees the object, which often remains for some seconds, especially if the light is very intense, and in vanishing, displays a series of colors in succession. This may be due to a deficiency of vitamin A. It has long been known that the persistence of the *after-image* is greatly prolonged in heavy smokers.

No state requires any tests for night blindness in issuing licenses for automobile drivers. Nor are aviators examined for it, nor railroad employees. The inference is that many accidents may be caused by disregard of this very common affliction.

It would be well if our lawmakers would give more attention to a question of impaired sight due to the wrong diet and the use of tobacco. Without desiring to encourage smokers in their pernicious self-indulgence, we may possibly in this connection call attention to the fact that vitamin A is found in great abundance in many of our most common and most inexpensive foodstuffs. It is found in butter, which was long considered to be its principal source, but recent researches have shown that spinach and other greens, as kale, curly leaf dock, spinach, escarole, and turnip tops contain from six to nine thousand units of vitamin A to the ounce. Parsley, used for garnishing but seldom eaten, is the richest of all known edibles in vitamin A, containing three thousand units, a full day's ration, in one gram.

Carrots also are rich in vitamin A, containing fifty per cent more of the vitamin than an equal amount of butter, though far inferior to most greenstuffs.

When night blindness is due to lack of vitamin A, a liberal serving of greens, an ounce or more, should be eaten at each meal. The probable result would be disappearance of the night blindness within two or three weeks, or less time.

Potatoes for Children

THE potato is an excellent food for growing children. It should not be made the chief part of the diet, of course, for it is highly farinaceous; but it contains an excellent quality of protein greatly superior to the protein of cereals of any sort, and the starch of a well-cooked potato is much more easily digestible than cereal starch of any kind. In fact, cooked potato starch digests in one-sixth of the time required for the digestion of the same amount of oatmeal starch.

The potato also has a great advantage over cereals in that it belongs to the class of basic ash foods and hence tends to maintain the normal alkalinity

of the blood which is necessary for high resistance to disease, such as colds, influenza, and pneumonia.

A purée prepared with potatoes and cream or rich milk is a most excellent breakfast dish for young children or even infants who are being weaned from the breast or the bottle. Another excellent combination is buttermilk and potato. The fine complexions, robustness and great longevity of the Irish have been authoritatively attributed to the large use of buttermilk and potatoes. Buttermilk thickened with mashed potatoes is an excellent dish for growing little ones.

Mashed potato flavored with Savita, an extract of yeast with a delightful mushroom flavor suggestive of chicken soup, is greatly relished by young children as well as grown-ups. Potato soup made by combining soy milk with mashed potato and flavored with Savita is a most wholesome dish for children and greatly liked by them. Such a soup greatly promotes growth in children because of its richness in vitamin B and the superior protein of the soy bean, both of which in a high degree promote body building through bone, muscle and nerve development.

It is a great mistake to feed children continuously on breakfast cereals because of the high acid ash character of all cereals and the almost universal deficiency of vitamins in the denatured cereals which form the bulk of most breakfast foods.

The American people would be healthier and in a few generations taller, stronger and longer lived if they replaced half the breakfast foods and other cereals they are now consuming with potatoes and other fresh vegetables.

All children should be fed potato in some form every day. Potato purée may be fed in small quantities as early as the third month, the amount fed being gradually increased with advancing age.

Coffee Drinking Hostile to Longevity

CAFFEIN is an alkaloid that manifests its toxic effects upon the heart and blood vessels. Caffein is a pressure-raising drug. The *Journal of the Iowa State Medical Society* uttered the warning that "old people should avoid tea and coffee not only because they are undesirable irritants of the nervous system, but also because they have a harmful effect upon the blood pressure. As the blood pressure naturally rises with the advance of the old age process, it is evident that a pressure-raising drug must hasten senile changes and thus shorten the life of the user."

The well-known effect of tea and coffee in producing insomnia tends to shorten life by interfering with the natural processes of repair which take place during sleep. Sleep, as the old adage runs, is Nature's sweet restorer. But this is true only of sound, normal sleep, not of the troubled fitful sleep of the coffee user.

The extensive use of cereal coffees and decaffeinated coffee in recent times has tended somewhat to lessen the injury from this source, but the gain thus made has probably been more than counterbalanced by the increased consumption of caffein in the form of cola drinks. A glass of Coca-Cola contains about as much caffein as a cup of coffee. This same is true of other cola beverages.

Coffee is particularly harmful for persons past middle age. It becomes more and more dangerous with advancing years for the reason that it increases the tendency to overexertion by paralyzing the fatigue center. Elderly persons are naturally disposed to exert themselves to an imprudent degree because they feel the effects of fatigue the next day instead of at the time of exertion, so-called secondary fatigue. Coffee unquestionably increases the wear and tear of the body, and hastens the arrival of the time

when the human machine will be ready for the scrap heap.

A person who does not feel comfortable and fit for duty until after his usual cup of coffee is a coffee addict, and is as truly a slave to caffeine as is the opium smoker to his narcotic.

Fast Days an Aid to Health

ABSTINENCE from meat is practiced on fast days by Roman Catholics and by some members of the Episcopalian Church. It is not unusual for the authorities in the Roman Catholic Church to grant a dispensation to individuals setting aside this rule on grounds of health. In the Lenten season of 1915 the Bishop of Oxford refused to approve such an application for the reason that it was unnecessary in view of the great variety of foods of a meatless character.

The Vegetarian Messenger and Health Review (Manchester, England), comments on this: "The devout churchman does not abstain from flesh foods for his health's sake, but it is beyond doubt that the Lenten period of self-discipline for the good of the soul has often resulted in greatly improved health. Body and soul are complementary and, in Browning's words, 'Soul helps body as body helps soul.' Lenten abstinence has led many to realize the physical benefits arising from a meatless dietary, notable among these being Canon Peter Green, a vegetarian for the last twenty-five years." —H.M.S.

Sing to Your Stomach

"MUSIC hath charms" not only to soothe savages and quiet wailing infants, but to settle disturbed stomachs as well. In recent years research has shown that the sympathetic nervous system is remarkably sensitive to the influence of rhythmic and melodious sounds. This fact explains many well-known phenomena. Soldiers wearied almost to collapse by

long marching, are revived and reinvigorated when the band begins to play. The thrills and exhilaration produced by a musical masterpiece, vocal or instrumental, are not merely psychic experiences. Every organ of the body participates.

The close association of mental states and the digestive function was clearly shown some years ago by an experiment made by Dr. Cannon, the famous professor of physiology of Harvard University. With the X-ray, he was watching the process of digestion in the stomach of a cat. The cat was happily purring, peristaltic waves were passing over the stomach every few seconds, and the whole digestive process was proceeding normally. Suddenly the Doctor pinched the cat's tail. Surprised and angered, the animal ruffled its fur and "spat." At the same instant, the stomach, clearly visible under the X-rays, ceased all activity. When the cat stopped purring, digestion stopped, and did not begin again until after the purring started.

Tolstoy's Attitude toward Flesh-Eating

COUNTESS ALEXANDRA TOLSTOY, daughter of the famous Russian writer, Count Tolstoy, recently gave an interesting and most enlightening address in which she said, in reply to a question regarding her father's philosophy, "He was one of the kindest of men. He regarded with horror the killing of animals for food. He abstained from meat, fowl and fish, not only because he felt he had no right to take away life, even the life of animals, but because he considered a vegetarian diet most conducive to good health and longevity. At eighty-two, he had the muscles and endurance of an athlete, and rode his horse at full gallop like a Cossack.

"On one occasion, when a visiting relative, after subsist-

ing for a few days on the simple fare served on his table, insisted on having a chicken dinner, my father went out to the back yard, caught a plump hen, tied it to her chair and placed a large butcher knife on the table near by. He insisted that if she wanted to eat chicken, she must perform the rôle of butcher herself, which she declined to do, and fled from the room. He felt that no one has any moral right to delegate to another the unpleasant task of killing an animal which he himself expects to eat."

New Information about Vitamins A and B

A NEW DISEASE distinct from pellagra and beriberi and believed to be due to a deficiency of vitamins A and B has been recognized and described by medical observers in Sierra Leone, Africa. Sierra Leone is a far-away country but this new discovery is important to Americans because of the increasing airplane activity which has enormously diminished the dimensions of our planet until the other side of the world has come to be nearer than the other side of our continent a generation ago. The characteristic symptoms of the disease are soreness of the tongue, lips, angles of the mouth and the skin about other orifices.

The symptoms quickly disappear when an abundant supply of either vitamin A or B is given. Vitamin A is the fat-soluble vitamin found in butter, corn oil, wheat oil, spinach, escarole and other greens. Escarole, kale and dandelion are very rich plant sources of vitamin A, containing 6,000 to 9,000 units to one ounce. Spinach contains about one-third this quantity and parsley more than 20,000 units per ounce. Vitamin B is found most abundant in certain types of yeast and in wheat germ. Wheat germ contains two-thirds as much as yeast.

A DIGEST OF HEALTH PROGRESS

The Non-Medicinal Treatment of Constipation

NON-CATHARTIC treatment of constipation includes foods and artificial bulk producers like mineral oil, agar, psyllium seed, cellulose and bran. Dr. John L. Kantor and Lenna F. Cooper (*Annals of Internal Medicine*) deal with the first factor, with special reference to fruits and their fiber content. They used prunes because of their ancient repute as cathartics and the recent discovery that they contain a principle with laxative properties; apples because of their wide popularity as a bowel regulator, and bananas because their smooth texture makes them particularly useful in a spastic or irritable colon.

Their subjects were nine hospital dietitians, four of whom were classified as constipated. These four had a low metabolism; this suggested some connection between intestinal action and thyroid secretion. The nine were placed on eight different diets for periods of twelve days, the fiber content being altered each time. As a result of these elaborate tests, the conclusion was reached that an adequate fiber intake is important in the dietetic treatment of constipation. Fruits, vegetables and cereals supply fiber. Prunes have three times as much of this as bananas and one and a half times as much as apples, and are generally more laxative than the other two. Yet in individual cases, apples or bananas were found more effective.

For relief of constipation, it is recommended that fruit be taken three times daily, preferably as desserts. Two grams of fruit fiber are ordinarily enough when the diet also contains four vegetables and some whole grain foodstuffs. This is supplied by

six prunes, one banana and one medium-sized apple. It is better to employ several sources of fiber than only one. Liberal intake of water is advised. Undernourished subjects may eat butter up to a sixth of a pound a day. Olive oil, half an ounce two or three times a day, either as such or as a cocktail with tomato or orange juice, is acceptable to some people.

Where the constipation is obstinate, the amount of fruit fiber may have to be increased considerably; additional fruit can be taken between meals if necessary. Prune juice may be used as a breakfast drink, as it is said to contain a laxative principle. The apples may be cooked. Bananas should not be eaten until the skin is generously flecked with brown.

The authors give tables of the fiber content of the common cereal foods, vegetables and fruits. Articles especially high in fiber are whole cereals, French artichokes, beans, beet greens, brussels sprouts, cabbage, carrots, young green onions, parsnips, green peas, winter squash, sweet potatoes, turnips, blackberries, figs, pears, prunes, raspberries, strawberries and tangerines.

Sugar as One Cause of Colds

IN TREATING children for repeated colds, Dr. Charles Gilmore Kerley lays great stress on reducing the sugar intake (forbidding candy), while instilling glycerin, ichthyol and sodium bicarbonate to dehydrate the water-logged nasal mucous membrane. Physical resistance is built up through dietary and hygienic measures. These conclusions are based on a study of 504 patients, ranging in age from one to fifteen years (*Archives of Pediatrics*).

Many of these children for much of the winter had colds lasting five to ten days, with intervals of one or two weeks be-

tween them. Five out of six had definite pathology of the upper respiratory tract. In most families there was an adult carrier of the common cold. The children usually had improper dietary habits — "supersaturation with sugar." Where there was allergy, hair mattresses, feather pillows, carpets and rugs were removed from the sleeping room. Kapok or cotton mattresses were substituted. When children went home cured, they were to continue daily nasal douches with a one per cent solution of sodium bicarbonate; a medicine dropper should be used with younger children.

The Vanishing Baby Crop

THE PEOPLE of the United States will be a declining race numerically in a very few years. Dr. O. E. Baker, the eminent authority of the Bureau of Agricultural Economics, thinks the peak will be reached by 1945 or 1950. Thereafter there will be a slow decline for a time, then the pace downward will be rapid. The birth rate has fallen twenty-five per cent in the last ten years. This tendency was noticeable even before the depression set in. There seems no likelihood that it will be reversed.

Dr. Baker says that fifty years from now there may be only one-third as many children as now. There will be nearly three times as many old people. Decentralization of industry, part-time farming and appreciation among well-to-do people of their responsibility for the reproduction of the race, are mentioned as remedies for this trend.

Dr. Louis L. Dublin, the noted statistician, says there has been no decline in the marriage rate and that Americans marry younger now than they did fifty years ago. By 1980, under the conditions now prevailing,

thirty-six per cent of the population would be over fifty years old. "Who is going to pay the old age pensions?" he asked. But it should be remembered that there will be fewer children to rear and to educate.

In England there were more deaths than births in the first half of 1936. The annual surplus of births in this country is now about 700,000 but the proportion of women of child-bearing age in the population is steadily shrinking.—S.

Tobacco and Circulation

THE SMOKING of tobacco by men in good health diminishes the amplitude of the arterial pulsations, lessens and sometimes even arrests the capillary circulation (at the same time provoking capillary spasms), accelerates the cardiac rhythm, and exaggerates the sympathetic reflexes. These conclusions are reached by a group of four investigators who made a report to the Academy of Medicine in Paris, as reported in *La Presse Medicale*. They tested ninety subjects between the ages of eighteen and thirty-five. Some were habitual smokers; others not. Some inhaled the smoke.

Each time that a subject smoked, there resulted an exaggeration of the imbalance of the sympathetic nervous system. These changes were produced both by the ordinary tobacco and that which had been denicotinized. No tolerance of tobacco was shown as the result of continued use.

Inflammation from Eyelid Tints

A FAIRLY new fashion, that of tinting the eyelids, has resulted in more business for the skin specialist. Dr. Henry C. Semon tells in the *Lancet* of four cases in his practice in which severe swelling of the eyelids was due to the use of such cosmetics. He says that formerly tinting of the eyelids was con-

fined to actresses, who limited themselves to shades of black. These preparations were chiefly carbon and were harmless. But beauty experts were now ready to match your eyelids to your complexion (itself a changing fashion), to the varying demands of light and shade, boudoir and ballroom, night and day.

Many women not on the stage have now taken up this practice. To meet the extensive color requirements, coal-tar dyes are used. In some instances trouble follows a single application of the tints, but one woman used a green shade at night and a blue one by day for four years with no ill effects. Then suddenly severe irritation developed in her eyelids. Dr. Semon points out that the skin covering the eyelids is especially delicate and hence the more readily affected by noxious substances.

Medical Attention for the Well

THE AVOWED IDEAL of the medical profession is the prevention of disease. Public health officials carry out this design but the regular practitioner is rarely called in until sickness has actually developed. Chauncey D. Leake, Ph. D., of the pharmacological laboratory of the California Medical School, San Francisco, believes that the doctor should begin his services before the patient is his patient—that is, while he is still well. This idea is elaborated in an address which is printed in *California and Western Medicine*.

The physician would make an arrangement with each client, varying the fee with the person's physical condition, his business situation and other circumstances. He would agree to make an examination as often as he thought expedient, give such advice and prescriptions as he thought warranted, and make such house calls as he felt wise. This plan has been widely practiced by specialists in the care of children in San Francisco for over twenty years and with sat-

isfactory results. It is pointed out that a large part of a lawyer's business is to keep their clients from being involved in litigation. Under this method the specialists would still pursue their calling as now, for disease would obviously not be abolished. It has long been known that in the Orient physicians are paid for keeping their patients well.

Shoes Bad for Tiny Babies

BABY SHOES may be precious keepsakes but they should not be worn until the infant has learned to walk. This is the opinion of Dr. Max Cohen, child specialist, expressed at the convention of the National Association of Chiropractors in New York. He believes that shoes are of no advantage in learning to walk, but on the contrary are harmful. Because the baby's bones are soft and the development of the feet is not completed, shoes can easily misform the feet. Some children have curvature of the spine at an early age because shoes have made their feet form incorrectly. There is no arch in the infantile foot until the age of four has been reached.

The Deadliest Disease of Civilization

THE NEWSPAPERS frequently report the death of some prominent man from coronary (heart) disease, often in the height of his activity and usefulness. Mortality from this ailment has been separately classified only since 1930. In that year the rate among the millions of industrial policy holders of the Metropolitan Life Insurance Company was only 4.7 per 100,000. By 1935 it had been multiplied nearly five times to 22.6. The first ten months of 1936 showed a further gain.

Angina pectoris is generally symptomatic of disease in the coronary arteries. The death rate from this disease has about doubled in five years among

Metropolitan policy holders. In the country at large, the death rate from coronary disease increased nearly two and one-half times in four years. Brookline, Mass., a suburb of Boston in which the homes are mostly those of wealthy people, the death rate from coronary disease in 1935 reached the amazing total of 156.6 per 100,000, an increase of more than 3,000 per cent in the last six years.

This malady is known to be due to degenerative changes resulting from wrong habits of living, and especially "high living." It attacks men more frequently than women. The death rate of Negroes from coronary disease is small compared with that of whites, doubtless because as a class, their habits of life are less unwholesome, because simpler and more primitive.

Gargling

THIS is an old-fashioned remedy which in late years has been pronounced worthless, but is nevertheless still used in most homes in cases of sore throat. Some experts have declared that a gargle cannot touch the upper reaches of the nasopharynx and that contraction of the fauces prevents its getting to the tonsils or the posterior pharyngeal wall. Tests by radiograph and with a methylene-blue solution were quoted in corroboration of these views. But Dr. Julius Kaunitz (*Journal of the American Medical Association*) has tried gargling with a thick suspension of bismuth and found that the tonsils, posterior pharynx and even the piriform recess were coated.

Progress in Treating Diabetes

BEFORE the discovery of insulin, diabetes was invariably fatal to children. Of 301 persons who died with or from that disease in 1935, in Boston, not one was a child. Only four were less than forty years old and the average age of all was 64.3 years. Dr. G. W. Lynch,

of the Peter Bent Brigham Hospital, writing in the *New England Journal of Medicine*, said that two-thirds of the deaths were of women. Nearly sixty per cent of the mortality was due to arteriosclerosis. While much has been accomplished by medical science, more is still possible, depending on earlier treatment of coma, gangrene and infections; more attention to blood and urine examinations in diabetic emergencies; more post-mortem examinations, and a reduction in postoperative mortality.

Arch Supports Sometimes Harmful

INDISCRIMINATE use of the arch supports sold in shoe stores is deprecated by Dr. Henry W. Meyerding in a communication appearing in *Minnesota Medicine*. They are often worn, he declares, by persons who do not need them. The usual condition found is a weak foot, not a flat foot. The defect is the result of non-use, sedentary life, or overweight, and may be aggravated by improper shoes. Correction of this type of foot may be had through exercise, avoidance of stress and strain, which occur among shop girls who stand for many hours a day and among men who are on their feet for long stretches. Tendons and ligaments become stretched. The muscles are weak, do not have good tone, and are relaxed. Being unable to bear the weight of the body normally, the bones become displaced.

These patients do not require arch supports. What they need is a system of graduated exercises that will build up those muscles which tend to give support. Then they will be able to walk in comfortable, well-fitted shoes.

A capital means of exercise in cases of weak feet with a tendency to flat foot disease, is wearing Chinese slippers. This slipper consists of only a sole and a part to receive the toe. In

walking, it is necessary to curl the toes under in order to keep the slipper from dropping off the foot. In the act of flexing the toes, the muscles of the sole of the foot are contracted, and this at once restores both the longitudinal and the transverse arch, and thus raises the instep.

Very little can be accomplished by the practice of special exercises for a few minutes once or twice a day, but the continuous use of the muscles in the manner necessitated by the wearing of the Chinese slippers, develops and strengthens the weak muscles, and so eventually combats the tendency to flattening of the foot.

Wearing a steel support in the shoe is a palliative measure which affords relief from pain and prevents distortion and deformity of the foot, but does not strengthen the muscles.

The wearing of the Chinese slipper will not restore the foot to a normal condition after the arches have been once broken down, but it is an excellent means of strengthening the muscles which support the arches of the foot and thus preventing flat foot.

In families in which the tendency to flat foot is hereditary — and there are many such — the children and young people of the family should be supplied with Chinese slippers and encouraged to wear them as much of the time as possible, at least while at home, in the house at all seasons, and during the summer when working about the yard or garden.

Curable Mental Disease

CONTRARY to the view widely held that insanity is usually hereditary and rarely curable, there has been within the last thirty or forty years a steadily growing recognition of the fact that a very large proportion of cases suffering from functional types of insanity are curable. Naturally, a large proportion of these are forms

of insanity which have been produced by physical causes.

Dr. L. L. Gazenavette, writing in the *New York State Journal of Medicine*, quotes the eminent Rosenau as maintaining that mental disorders may be brought on by such physical causes as infectious diseases, syphilis, typhoid fever, influenza, scarlet fever, septicemia, acute and chronic poisoning from drugs, alcohol, endogenous poisoning from nephritis, heart disease and diabetes, disease of the thyroid and head injuries. Other forms of insanity result from inherent abnormal mental make-up of the patient; still others from vascular changes incident to old age. So that a family should not feel disgraced when one of its number is committed to a hospital. Furthermore, a high percentage of such patients are now cured.

Hard Food Good for Teeth

MORE THAN ONE factor is involved in tooth decay. Hasty swallowing of soft foods is stressed by K. E. Schreiner, writing in a Norwegian magazine which is quoted by the *British Medical Journal*. He made a dental examination of all the skulls in the Anatomical Institute at Oslo. Of 840 skulls dating about 1500 A. D., only some seventeen per cent showed any tooth decay. Most of the cavities were small and limited to fissures in the molars. Yet more than ninety-nine per cent of the school children in Oslo now have dental caries. Of all the teeth in 387 Laplander skulls, less than one per cent had cavities and these cavities were smaller than a pin's head.

Schreiner does not believe that those Laplanders of four centuries ago lived any more hygienically than their descendants today. They dwelt in dark, damp hovels and were cooped up in them all the long winters. Man and beast were starved and the children were often scrofulous and rickety. Evidences of vitamin deficiency are seen.

Their remarkable teeth are hence attributed to their having to chew hard, tough food. The effects of this grinding were shown on the teeth. The wisdom teeth were least abraded and had most decay. These facts were true of both the old Norwegians and Laplanders.

Serious Injury May Attend a Black Eye

THE black eye is usually spoken of in a jocular way, but it may be the sign of a serious injury, says Dr. Emanuel Krinsky, in the *Sight Saving Review*. While in most cases this discoloration is of no consequence, it is at times attended by a fracture of the skull or a hemorrhage into the eyeball, with almost sudden blindness. He advises therefore that every black eye be examined by a physician.

Dr. Krinsky says that eyes are very rarely injured by breaking glasses. The reason is that on the slightest shock or fear, the wearer will automatically close his lids and thus protect the eyeball. At any rate, if there is fear of such an accident to the eye, spectacles may now be bought which are made of unshatterable glass.

Simple Recipe for Infant Feeding

AS A COUNTRY doctor, J. H. Hiden had often to consider a summer diet for infants which would not be expensive and could easily be prepared by a mother. He reasoned that centuries of experience had indicated that rice was a superior food in hot climates, so he chose that. He took condensed milk, added to it the required amount of boiled water to give the right strength and added one-fourth of its quantity of boiled rice in the form of a gruel about as thick as cream. The size of each feeding was determined by the age and weight of the infant. This is a sterile diet, easily digested, highly nutritious and sufficiently balanced to meet the

usual requirements. Orange juice is given two or three times a day, or, lacking that, tomato juice.

The diet above described should prove very satisfactory nourishment for a young child, especially during the warm season when there are so many opportunities for acquiring bowel troubles through infection with putrefactive and other disease-producing germs.

Coffee Injures the Liver

PROFESSOR STIEVE, of Berlin, has for several years been making a careful study of the effect of caffeine, the poisonous principle of coffee, upon the animal body. The *Journal of the American Medical Association* recently reported an address made by him on the effect of coffee on the liver, before the Berlin Medical Society.

In several cases rabbits failed to bring forth their young, and rabbits that were born alive were smaller than usual. Some of the litter died within the first week. All of the survivors were weak and undersized.

These results show the highly poisonous effects of the caffeine of coffee and indicate that coffee is particularly poisonous to the unborn. It is thus evident that prospective mothers, in the use of coffee, injure not only themselves but their unborn infants.

Alcohol Found More Harmful Than Narcotics

THE PHRASE "drug addict" has a very sinister sound. It calls to mind the picture of a man who has more or less wrecked his life. But the person who drinks what is termed a moderate amount of liquor is by many regarded as quite blameless. Dr. Robert A. Schless, as chief of the Bureau of Charities and Correction, in a report to the Municipal Court of Philadelphia, declared that in

some aspects alcoholic beverages are worse than drugs. As to evil effects, directly in crime or in damage to body and morale of the user, narcotics are far milder than the steady use of strong drink. Certainly, he went on, whisky, with its record of incitation to violence and lust, and its permanent fibrosis of vital body organs, has incomparably more damage to answer for.

Dr. Schless also decried the tradition that there was an essential difference between narcotic addiction and habituation to tobacco.

Prolonged use of alcohol may cause actual loss of intelligence, according to Dr. Harry C. Mahan, of the Warren State Hospital, Warren, Penn. (*Science News Letter*). His conclusion was reached as the result of the study of fifty alcoholic patients. One of these, a highly trained professional man, had sunk to the mental level of a child of ten and a half years. He had, however, retained his vocabulary, and this served as an index to his former intelligence.

Cosmetics Which Injure the Eyes

INADEQUATE protection is given to the public by the Food and Drug Act of 1906, according to Dr. Walter I. Lillie. He is a member of the ophthalmological department of Temple University School of Medicine, Philadelphia, and writes in the *Sight Saving Review*, published by the National Society for Prevention of Blindness. He confines himself to one branch of the subject, injury to the eyes.

Among dangerous substances offered freely for sale are certain cosmetics. There are three classes of them, for weight reduction, hair dyes and depilatory ointments. The eyes are usually affected in one of two ways, either through direct contact or indirectly through the absorption of the poisonous ingredient in the body. The re-

sults may be temporary or permanent, depending on the substance used and also on the tolerance of the individual.

Many cases of injury have occurred but the Federal authorities are powerless to do anything. The law requires proper labeling but does not penalize adulteration and misbranding. It is estimated that the cosmetic industry in this country amounts to a billion dollars a year. Yet it is outside Federal regulation because no medical claims are made. Users of such preparations may be paralyzed, blinded or disfigured, but the law cannot remove the cosmetics from public sale.

Even if curative properties are falsely asserted, there may be no means of stopping this. If the claims are made on the label, the government prosecutor must show that the manufacturer knew he was swindling the customer. But advertising in print or on the radio is beyond Federal control, and it is in these fields that extravagant and lying statements are commonly made.

Advantages of Vegetable Milk

MILK IS WIDELY recommended as a food for infants and children but many of them are distressed or made sick by it. A purely vegetable milk can be substituted for it to excellent advantage, according to Dorothy Englehard Lane, who writes in the *American Journal of Diseases of Children*. The artificial product which she uses she calls almond-lac, the ingredients in addition to almond being peanut, leafy vegetables, soy bean, sugar, starch and salt. It has about the same caloric value as human milk but its content of iron, caffeine and iodine is considerably higher.

Miss Lane has been using the almond in dietetic studies since 1922. In the years 1931-1936, the vegetable milk was extensively given with great success in a variety of ailments to

infants and adults throughout the country. These cases included many of infantile eczema; a number of the subjects were continued on the diet when a cure had been affected because of their excellent normal development. In many instances eczema has been arrested immediately; in others the skin lesions did not definitely improve for from two to four weeks, although invariably the infant began to sleep better in a few days.

The preparation has proved well adapted to sufferers from infantile paralysis, diarrhea or constipation. It has also been used by leading child specialists in asthma, vomiting and malnutrition.

A mother who had been on a vegetarian diet during pregnancy, gave birth to twins in 1928, and these have been similarly fed down to the present time. Periodical examinations by a physician have shown them to be perfectly developed. They have had no tooth decay. Other children on a vegetarian diet have also been free from dental caries, which is so common under usual feeding conditions. From one and a half pints to a quart of the vegetable milk is given daily and is keenly relished. In 1930 Bosshardt and Lane compared the nutrition of school children on a mixed diet with those on vegetarian fare. The latter in most cases showed greater increases in physical measurements than those receiving milk and meat.

Miss Lane concludes that her studies indicate that it is less difficult to plan a vegetable diet which will meet all requirements than to plan a satisfactory mixed one. Milk, meat, eggs, butter and cream may produce too alkaline a reaction in the intestines, while a great many vegetables contain a more normal amount of utilizable calcium and phosphorous and a larger amount of utilizable iron, copper and iodine, and many are higher in vitamins A and D, particularly the leafy ones grown in the summer sunshine.

Healthful Recipes

SWISS SOUP

2 small potatoes 1½ tbsps. flour
 ½ small turnip 2 tbsps. butter
 ¼ onion 2 tps. Savita
 1 pint milk 3 cups water
 1 tsp. salt

Wash, pare and cut the potatoes and turnips in one-quarter inch slices. Put to cook in three cups of boiling water. Add the onion, cut into thin slices. Cook until the vegetables are tender. Drain, reserving the water to add to the vegetables, after they have been rubbed through a sieve. Make a thin White Sauce of the butter, flour, milk and Savita, and add to the vegetables. Reheat and serve.

HONGROISE POTATOES

3 cups potato 1 tsp. grated
 cubes onion
 7 tbsps. butter 2 tbsps. flour
 Paprika 1 cup milk
 2 tbsps. chopped 1 egg yolk
 parsley 1 tsp. salt

Wash, pare and cut the potatoes in one-third inch cubes; parboil three minutes and drain. Add five tablespoons of the butter and cook on the back of the stove until the potatoes are soft and slightly browned. Melt two tablespoons of butter; add the onion, flour, and pour the hot milk on gradually. Season with salt and paprika, then add the beaten egg yolk. Pour the sauce over the potatoes and sprinkle with finely chopped parsley.

CORN AND CHEESE SOUFFLE

4 tbsps. butter 2 cups corn
 1 tbsp. chopped 1 cup grated
 green pepper cheese
 4 tbsps. flour 3 eggs
 2 cups milk ½ tsp. salt

Melt the butter and cook the green pepper in it. Add the flour; mix well and add the milk. When thickened, remove from the fire, add the corn, cheese, beaten egg yolks and salt. Fold

in the stiffly beaten whites and bake in ramekins surrounded with hot water, in a moderate oven.

SAVORY CELERY

4 cups sliced 2 tps. Savita
 celery 3 tbsps. butter
 3½ cups water 3 tbsps. flour

Peel and cut the celery stalks into half inch pieces. Cook until tender. Melt the butter, stir in the flour, and brown slightly. Add the water in which the celery has been cooked. Season with Savita and salt. Cook a few minutes, add the celery, and serve.

NUTTOSE FRICASSEE

1 lb. Nuttose 2 cups strained
 2 tbsps. butter tomato
 1 tsp. salt 1 tsp. grated onion

Remove the Nuttose from the can and slice or cut into small cubes about three-fourths of an inch square. Add the strained tomato and seasoning. Cook slowly on top of the stove or bake in the oven about one hour, until the sauce is quite thick.

BAKED CABBAGE

1 medium-sized 2 eggs
 head cabbage 1 tsp. salt
 1 pint milk

Chop the cabbage, boil in salted water until tender, then drain. Beat together the eggs and milk, pour over the cabbage and bake in a moderate oven until set.

CREAMED SPINACH ON TOAST

1 pint cooked 1 cup White
 spinach Sauce
 6 hard-cooked ½ tsp. salt
 eggs 6 slices bread

Drain the liquid from the spinach and chop. Prepare the White Sauce, add the spinach, chopped eggs and salt. Reheat. Trim the crusts from the bread. Cut into triangular shaped

pieces and toast. Arrange the creamed spinach on the toast.

APRICOT SALAD

3 halves apricots 3 slices banana
 2 tbsps. mayon- 1 tsp. chopped
 naise nuts

Arrange the apricot halves with hollow side down and edges just touching. Place the slices of banana where apricot edges meet. Put a spoonful of mayonnaise in the center and sprinkle the chopped nuts on top.

NUT AND BRAN MUFFINS

2 cups flour ¼ cup bran
 3 tps. baking ½ cup chopped
 powder nuts
 ¼ cup Meltose ¾ cup milk
 4 tbsps. butter ¼ cup sugar
 2 eggs 1 tsp. salt

Cream butter and sugar and add the eggs, well beaten. Sift the dry ingredients and add the bran. Add the dry ingredients alternately with the milk and Meltose to the creamed mixture. Add the chopped nuts and bake in muffin tins 20 to 25 minutes, at 425° F.

RICE WITH PRUNE WHIP

½ cup rice 1 egg white
 ½ lb. dried prunes ¾ cup whipping
 2 tbsps. sugar cream
 ½ cup milk ½ cup water
 ½ cup cream

Wash the prunes, pour boiling water over them, and let stand a few minutes. Soak over night in cold water and cook until soft. Remove the seeds and rub the prunes through a colander.

Steam the rice in two-thirds of a cup of hot water. When the water is absorbed, add the cream and hot milk, and steam until tender. Add the sugar and beaten egg white to the prune purée. Place a small portion of the steamed rice on a small plate with a generous spoonful of the prune whip and a heaping spoonful of whipped cream on top.

THE HEALTH QUESTION BOX

Weak Heart

J. L. W., Canada, asks: What is the treatment for a weak heart?

Answer. — Weakness of the heart when due to lack of food or deficient exercise may be corrected by proper diet and by carefully graduated exercise; but weakness of the heart due to myocarditis or other disease, or to old age, is not likely to be radically or permanently benefited by any sort of treatment. By a careful diet and good nursing, much may be done, even in such cases, to prolong life by improving the action of the heart. Great care must be taken to keep the bowels free from putrefying residues. This is done by changing the intestinal flora and avoiding the use of putrefactive foodstuffs.

Nut Proteins

A. L. B., Kansas, asks: What can one do who cannot eat meat, eggs or milk?

Answer. — He may find ample protein in other foods and need not suffer any injury. Nuts contain a superior kind of protein. Nut proteins do not form curds in the stomach, as milk does. The curds of milk often pass undigested to the colon and produce poisons. The protein of nuts is less likely to produce such poisons and is often better utilized than any of the animal proteins. Malted Nuts is a strictly vegetable product resembling milk in appearance and in composition, and is a highly digestible and very agreeable substitute for milk.

Diet for High Blood Pressure

C. P., Texas, asks: What should the diet be for a woman forty-six years of age who has high blood pressure?

Answer. — Avoid tea, coffee, condiments and all poison-containing foods. Use breakfast foods and cereals rather spar-

ingly. Make the bulk of the diet consist of vegetables and fruits. Fresh or uncooked fruits and vegetables are particularly valuable. Liberal quantities of roughage are highly necessary. The bowels should be trained to evacuate three times a day. If the tongue is coated and the breath bad, an enema should be taken at bedtime until these symptoms disappear.

The Spleen

J. B., Michigan, asks: Of what use is the spleen?

Answer. — It is concerned both in the destroying and the making of blood cells. Besides, it acts as a pump to drive blood through the liver, and it may have many other uses, such as making hormones. It is possible to live without the spleen.

Yogurt Buttermilk — Cider — Insulin

A. E. D., Ohio, asks: 1. You state in the December issue of GOOD HEALTH that yogurt cannot control pernicious colon germs. Just what are the benefits of its use?

2. How does sweet cider, both raw and pasteurized, compare with orange and tomato juice for vitamin content and other benefits?

3. In the December issue you mention the use of insulin to increase weight. Can you tell me more about it and whether it would have to be used under the direction of a physician?

Answer. — 1. Yogurt buttermilk is wholesome and useful in cases of gastroduodenitis, which involves only the upper part of the digestive tract, where it finds enough oxygen to enable it to live and flourish. For infection of the lower part of the small intestine and the colon, *Lactobacillus acidophilus*, a germ which can live anywhere in the intestinal tract when

proper nourishment is provided, must be employed. This is found in soy acidophilus milk.

2. Sweet cider, or apple juice, contains much less vitamin C than does the orange or grapefruit, and has a smaller nutritive value.

3. Insulin may be used in such a way as to produce a great increase in appetite and digestive vigor, and thus becomes a means of increasing weight. It should be used only under the supervision of a physician.

Insulin — Starch in the Soy Bean

R. V. E., California, asks: 1. The December issue of GOOD HEALTH, page 371, contains an article on the use of insulin for diabetes and also to increase weight. What is the usual amount of dose used in these cases? 2. On page 360 of the same issue it is mentioned that the soy bean contains no starch. Some claim the soy bean contains about 20% starch. I would like to know the facts.

Answer. — 1. See paragraph 3 of the preceding answer.

2. The soy bean contains a varying percentage of carbohydrates, but these are for the most part of a sort that are not utilized by the body. The actual percentage of available starch is very small — so small, in fact, that it may be practically ignored in arranging the bill of fare.

Brown Sugar

J. L., Massachusetts, asks: Is brown sugar wholesome?

Answer. — Brown sugar is better than the ordinary white cane sugar for the reason that it contains some iron and lime. However, the free use of cane sugar in any form is not so well tolerated by the stomach as malt sugar and the natural sugar of fruit juices.

Phototherapy — Infra-red and Sun Lamps

- A. M. S., Wisconsin, asks: 1. Will you give me some knowledge of the use and the benefit of the infra-red lamps and sun lamps? Can one use the same lamp for both lights?
2. Is there any danger in the use of these lights?

Answer.—1. So-called infra-red lamps do not differ essentially from the ordinary incandescent lamp except that the light produced contains a larger proportion of infra-red rays than do others. All incandescent lamps produce infra-red rays, and may be used for the same purpose as the special infra-red lamps, provided they produce sufficient heat. To be effective, the heat intensity should be as much as the skin will bear.

2. No, except that one should be careful to avoid burning the skin. This caution, of course, applies to all hot applications of any sort.

Hydrochloric Acid in Pernicious Anemia

- W. E. B., California, asks: I suffer from pernicious anemia but have been holding my blood up to normal with injections of Lederle's concentrated liver extract and also take a glass or two of grape juice daily with raw egg yolks beaten up in it. However, having no hydrochloric acid, I find it difficult to digest proteins. Have tried taking a few drops of dilute hydrochloric acid with my meals but it did not seem to help or agree with me. What can be done?

Answer.—Persons suffering from pernicious anemia should make use of hydrochloric acid in some form. A form of hydrochloric acid which the writer has used for many years is commercially known as *acidone*. This preparation contains one grain of hydrochloric acid, the equivalent of ten drops of the ordinary dilute acid.

The especial advantage afforded by this preparation is

that the acid is given off gradually, thus imitating the natural, gradual supply of acid in the stomach during the process of digestion. Hydrochloric acid is the normal disinfectant of the stomach. When it is absent, the stomach is without this protection, hence the importance of an artificial supply of acid when the gastric glands have ceased to produce this important intestinal disinfectant.

Fats and Pancreatic Secretion — Sweetbreads

- E. M., Illinois, asks: 1. Are fats a stimulant of the pancreatic secretion, and if so, which are most desirable for the purpose?
2. Is it true that eating of sweetbreads, as recently suggested by a doctor, will supply pancreatic enzymes and thereby be an aid to the assimilation of other foods?

Answer.—1. Fats stimulate both the flow of pancreatic secretion and bile. Sweet butter and vegetable fats, that is, fats obtained from fruits and nuts, are preferable to animal fats.

2. A person whose pancreatic secretion is deficient can not expect to be benefited by eating the pancreas, or so-called sweetbreads. Although the pancreas produces pancreatic secretion, the gland itself contains only a minute quantity of the secretion at the moment of death, and a short time later the potency of the small amount of pancreatic juice in the gland when the animal was killed, will have been exhausted by the action of the juice upon the gland itself, which begins as soon as death occurs.

Cranberries

- C. L. A., New York, asks: Do you approve of the use of cranberries as food?

Answer.—Cranberries are a wholesome food, but on account of containing a little benzoic acid, they should not be freely used by persons who are suffering from acidosis or who have highly acid urine.

Improving Poor Physique

STRIKING evidence of race degeneracy is always presented when large bodies of men are examined for admission to the army of any country. Much of this physical inferiority is preventable and can be remedied by appropriate measures. England has been having difficulty in filling up the ranks of her army. She is now trying to meet this situation by training the substandard recruits. A squad of thirty-two men is being used for three months in the first test. At the end of twelve days they have shown marked improvement, as told by the London correspondent of the *Journal of the American Medical Association*. They are more alert mentally, have gained an average of two and a half pounds in weight and have increased their chest expansion an average of half an inch.

One man who had been a kitchen porter and had no chest expansion when he began training, made the greatest gain, one inch. The men receive extra milk and fruits in addition to the regular ration. They have special games, physical training, remedial exercises and school instruction, with long walks into the country on Sundays. It seems likely that most of them will meet the requirements when the three months are up.

If our educational institutions gave similar training, and if physical education were made as essential a part of our educational programs as arithmetic, grammar, and other supposed essentials, a few generations would give us a good start toward a new human race.—S.

I VENTURE to maintain that there are multitudes to whom the necessity of discharging the duties of a butcher would be so inexpressibly painful and revolting, that if they could obtain flesh diet upon no other condition, they would relinquish it forever.—W. E. H. Lecky, *History of European Morals*.

The Bland or Non-Laxative Diet

(Continued from page 76)

A diet of cereal gruels is often of greatest service in cases of intestinal infection with looseness of the bowels, especially in children, not because of its bland or nonlaxative character, but because it floods the intestine with carbohydrate, a kind of nutriment which encourages the growth of beneficent acid-forming organisms, and discourages the growth of the putrefactive and disease-producing bacteria which are the cause of the diarrhea. The addition of milk sugar to the diet is advantageous, hastening the change of flora and so terminating the bowel disorder. Soy acidophilus milk and Lacto-Dextrin or Nuflora, two to three pints, will almost invariably arrest the looseness in a day or two. Hot enemas (105° to 110° F.) should be given daily.

In cases of stomatitis, or after burns of the mouth and throat, the rice regimen is most useful. Well-cooked rice gruel or jelly will be tolerated when contact of almost any other food is painful.—J.H.K.

Harm from Tooth Paste Fraud

THOSE words of Puck, "What fools these mortals be!" are well justified by the huge purchases of tooth pastes and powders and antiseptic mouth washes in this country. Not only is most of this money wasted but some of the "remedies" are actually harmful. Another serious effect is that many people believe the untruthful claims put forth in advertising and hence fail to go to their dentist when they should. Irreparable injury may thus be done to their teeth and gums.

The whole subject is discussed comprehensively and scientifically by Dr. Bissell B. Palmer in a book entitled *Paying Through the Teeth*. He is a former president of the American College of Dentists and editor of the *New York Journal of Dentistry*.

Decay of the teeth is the commonest of ailments. It may have several causes. Hygiene of the mouth is an important preventive but is not always effective. In spite of the slogan, a clean tooth does sometimes decay, while perfect teeth are found in mouths which a toothbrush has never entered. Diet deficiencies often lead to caries. Many primitive races, like the Eskimos, have excellent teeth until they adopt the white man's "civilized diet," and then develop numerous cavities.

Manufacturers advertise various claims for their dentifrices. One is that the preparation contains antiseptics which kill all bacteria in the mouth and hence eliminate the causes of decay. As a matter of fact, the mouth always swarms with bacteria; if these were destroyed, others would soon replace them. Moreover, a wash which is strong enough to kill these organisms would injure the tissues of the mouth. A weaker preparation would simply be useless. Besides, the secretion of saliva is stimulated by these antiseptics, which are thus automatically diluted. Even if sterilization were effective, it would neither prevent nor cure tooth decay, pyorrhea or bad breath.

Another brand may be advertised as containing some antacid ingredient like milk of magnesia which acts by neutralizing the acids identified with caries. But the saliva is usually slightly acid in reaction. Even if an alkaline condition of the mouth were brought about by a tooth paste, the effect would soon wear off. At most the protection would last only a small part of the twenty-four hours.

Still another promise made is to give "pearly white teeth." Bleaches are decidedly injurious, since they destroy enamel and thus open the way to decay. If an extracted tooth is dropped into a bottle of one of these acid preparations, the tooth would entirely disappear in a short time.

A toothbrush serves two purposes — it cleans the teeth and

it stimulates the circulation of blood in the gums. Any further claims are fraudulent. Soap and chalk form an acceptable tooth cleanser. Some dentists recommend salt water.

The sale of toothache drops and wax should be discouraged, since it tends to keep the sufferer from going to a dentist. Sometimes persons burn their mouths badly by using such drops. If no cavity is visible in an aching tooth, hot water and then cold should be applied. If heat intensifies the pain, and cold relieves it, there is likelihood that the pulp is infected and highly congested.

Teething lotions and syrups have been found by government chemists to contain morphin, chloroform, opium, potassium bromid and alcohol. Their sale has been stopped. Children had been killed by these medicines.

The expenditures in advertising tooth pastes and powders over the radio and in the newspapers run into the millions every year. When you buy one of these products, your money goes chiefly for sales cost. The materials used are cheap. A council on Dental Therapeutics, made up of distinguished authorities in several fields, has since 1929 been investigating dental products. A few of the pastes and powders were accepted, but all the best known ones were rejected.

The Federal officials have done what they can to protect the public from fraudulent or injurious preparations but are handicapped by the law. They can compel the proper labeling of a remedy but have no power over the claims made over the radio or in other forms of advertising.

Pyorrhea is not caused by any one organism and cannot be cured by nostrums. It can be arrested and healed only through early recognition and treatment. If reliance is placed on lying advertisements, the disease may advance until the patient has developed a serious condition from the continual swallowing or absorption of pus.—S.

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3-37

Air Scrubbers

THE SMOKE from big industrial plants can be cleaned of its poisonous gases by a process invented by Dr. H. F. Johnstone and A. D. Singh, of the chemical engineering department of the University of Illinois. They described this mechanism at a meeting of the American Chemical Society in New York. The discharge from the chimneys is passed through a sodium sulphite solution which holds the sulphur chlorid, nitrous and hydrochloric acids. These are the gases chiefly responsible for poisoning the air. The sodium sulphite is then chemically treated to recover sulphur dioxide and to get a sodium solution to repeat the operation.

Previous efforts to solve this problem failed because of their expensiveness. The new method yields a supply of sulphur which can be sold. In large cities the air may contain from two to six parts per million of these deadly fumes. Three parts are enough to affect the health. The lungs and stomach are most likely to be injured. In 1930 nearly a hundred persons were suddenly killed in the Meuse Valley, in Belgium, by a heavy concentration of poisons in the air. This led the two investigators to new vigor in their research.

The air is cleansed by means of scrubbers which are made of wooden laths, and rise to a height of fifteen or twenty feet. They are about ninety-eight per cent effective. A big chimney may discharge more than a million feet of gas per minute.—S.

A physician who made a search for centenarians in France found sixty-six whose records he regarded as authentic. Only ten were men. The oldest was one hundred and six (*The Lancet*).

Experts in the service of the government have developed a process to retard the activity of an enzyme which causes spoilage of eggs in storage.

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In Which We Answer a Question Often Asked

MANY people who have never visited Battle Creek ask the question: "What is the Battle Creek Sanitarium?"

The answer is that the Battle Creek Sanitarium is primarily an up-to-date, scientific medical institution.

On the staff are fifty physicians, several of them of international reputation. Treatment of nearly two hundred thousand patients for almost every known type of disease over a period of fifty years, has given the Sanitarium a background of knowledge and experience probably surpassed by no other medical institution.

The Sanitarium has brought together under unified control all the resources that modern medical science has to offer in the diagnosis and treatment of disease. To this end no expense has been spared. Members of the staff are always on the alert for new developments and are quick to employ them as soon as they have proved their value.

Experience has shown that there are three distinct types of benefits that medicine can confer upon mankind:

First: Health education—that is, teaching people how to live in order that their bodies may function with maximum efficiency, thereby avoiding disease and premature old age.

Second: Taking bodies that have been abused by improper living and, by corrective measures, restoring damaged parts to normal functioning.

Third: Alleviation of the suffering and extension of the life expectancy of those af-

flicted with incurable diseases, by means of carefully controlled treatment and a program of right living.

This calls for many and varied applications of modern medicine. Diet and advanced therapeutic methods constitute a very important part of the treatment, but surgery has its place and is used when necessary. A complete modern hospital is part of the Sanitarium equipment.

To the Battle Creek Sanitarium medical science owes many fundamental discoveries of great importance. Research work is continually in progress. Two scientific laboratories are maintained for the study of nutritional problems and the relations of foods to disease. The X-ray department is recognized as one of the most complete in existence and out of it have come many important advances in technique and treatment.

The program of diagnosis, treatment and health by training that is known as the Battle Creek Idea, has penetrated to the most remote corners of civilization. To the Battle Creek Sanitarium, therefore, come thousands of people each year—from all walks of life and from all parts of the world—with assurance that here they will receive all the benefits that modern medical science has to offer.

Those who desire more detailed information about the Battle Creek Sanitarium and its methods are invited to write for descriptive literature. Address—

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*Looking through the Magnificent Colonnade,
Main Building of The Battle Creek Sanitarium*

The Battle Creek Sanitarium